

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-10 will be pending. Claims 1-6 have been amended, claims 7 and 8 have been canceled, and claims 9 and 10 have been added. No new matter has been added.

§103 Rejection of Claims 1-6

In Section 2 of the Office Action, claims 1-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lee *et al.* (US 6,614,477 B1; hereafter referred to as "Lee") in view of Kawamura *et al.* (US 5,767,903; hereafter referred to as "Kawamura"). Claim 1 has been amended to address the rejection.

In the Background section of the Specification, it was stated that "[i]n case of dealing with a still image in the camcorder, since two fields of the interlace-scanned image sensing signal form an image corresponding to one frame, a time delay between fields causes deterioration of image quality. Therefore, recording/reproducing of a still image is carried out by converting an interlaced signal into a progressive scan signal. ... In contrast, in an electronic still camera specialized for still images, a still image sensing signal with high quality obtained by progressive scanning from a solid image sensor capable of progressive scanning is recorded onto a recording medium. ... In a solid image sensor capable of progressive scanning, a still image sensing signal with high quality can be obtained by progressive scanning. However, as shown in FIG. 12, since charge storing is carried out in one frame period, the image is blurred when a

moving object is picked up. A problem hence appears in that the image cannot be quite still.”

Background of the Specification, page 2, lines 1-15.

To address the above-described shortcomings of the conventional video camera apparatus, embodiments of the present invention provide methods and apparatuses for a single-unit video and image sensing, capable of obtaining still images without blurring using a progressive scan mode.

For example, the structure of video camera apparatus claim 1, for capturing video and still images as frames, includes:

a solid image sensor having an electronic shutter for outputting an image-sensing signal in a progressive scan mode, said solid image sensor including a plurality of pixel sensors configured to process charges accumulated on the pixel sensors as the image-sensing signal,

wherein, in said progressive scan mode, the charges accumulated and stored for a first field of a particular frame are discharged before the charges accumulated for a second field of the particular frame are stored, and

wherein the stored charges of the second field are read out in next two fields of a subsequent frame; and

drive control means for controlling the electronic shutter of the solid image sensor at a field cycle of a standard television system used as a basic cycle, thereby to output the image sensing signal from the solid image sensor in the progressive scan mode; and

encoding means for encoding the image outputted from the solid image sensor; and

memory means for recording the image which is encoded by said encoding means,

wherein, when an image is captured for generating a still image that is recorded on said memory means, the progressive scan mode is forcedly set.

(emphasis added)

In summary, one aspect of apparatus claim 1 includes: “*a solid image sensor having an electronic shutter for outputting an image-sensing signal in a progressive scan mode, . . . wherein the image-sensing signal in said progressive scan mode is outputted for generating still images, wherein, in said progressive scan mode, the charges accumulated and stored for a first field of a particular frame are discharged . . . ; and drive control means for controlling the electronic shutter . . . thereby to output the image sensing signal from the solid image sensor in the progressive scan mode.*” As amended, apparatus claim 1 further includes: an *encoding means* for encoding the image outputted from the solid image sensor (*see Specification, page 12, lines 3-9*); and *memory means* for recording the image which is encoded by said encoding means (*see Specification, page 14, line 6 to page 15, line 11*), wherein, when an image is captured for generating a still image that is recorded on said memory means, the progressive scan mode is forcedly set (*see Specification, page 15, lines 14-20 (emphasis added)*). In other words, apparatus claim 1 includes encoding means, recording means, and also forcedly setting the progressive scan mode when a still image is captured. This embodiment thus allows the capturing and recording of still images without blurring, to achieve the invention’s objective of producing better image quality.

By contrast, Both Lee and Kawamura fail to teach or suggest “encoding means for encoding the image outputted from the solid image sensor; and memory means for recording the image which is encoded by said encoding means, wherein, when an image is captured for generating a still image that is recorded on said memory means, the progressive scan mode is forcedly set,” as claimed. Thus, Lee and Kawamura, individually or in combination, fail to teach or suggest all the limitations of claim 1.

Based on the foregoing discussion, it is maintained that claim 1 should be allowable over Lee and Kawamura. Since claims 2-6 closely parallel and include substantially similar

limitations as those recited in, claim 1, claims 2-6 should also be allowable over the combination of Lee and Kawamura.

Accordingly, it is submitted that the rejection of claims 1-6 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claims 7-8

In Section 3 of the Office Action, claims 7 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Kawamura, in further view of Inuiya (US 6,222,986).

Claims 7 and 8 have been canceled. Accordingly, it is submitted that the rejection of claims 7 and 8 has been obviated and withdrawal thereof is respectfully requested.

Newly-added claims 9 and 10

Claims 9 and 10 have been added. Based on the foregoing discussion regarding claim 1, and since claims 9 and 10 depend from claim 1 and recite additional limitations, claims 9 and 10 should be allowable over the cited prior art.

Accordingly, favorable examination of claims 9 and 10 is respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-10 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35

U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

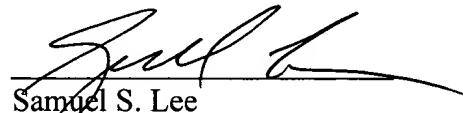
In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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